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THE BROWNELL TURN-TABLE.

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This Turn-table is constructed upon the general plan of that devised some years ago, by C. M. Kinne of San Francisco, California. With the several important improvements which have been added by myself it seems to comprise all the points of an ideal Turn-table,—strength, lightness and durability, with perfect accuracy and facility of operation.

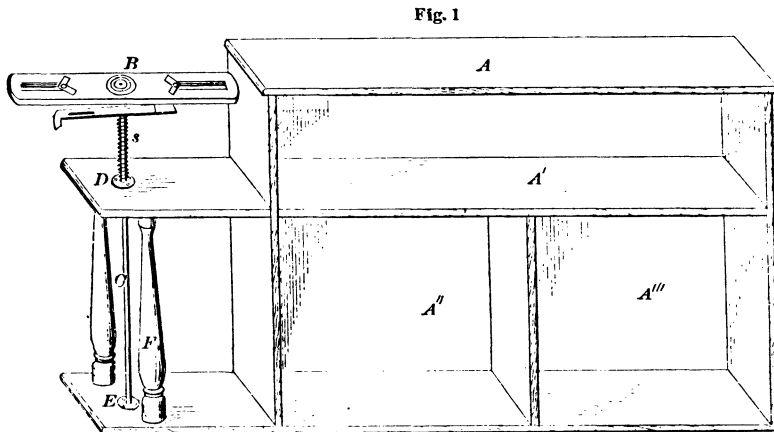
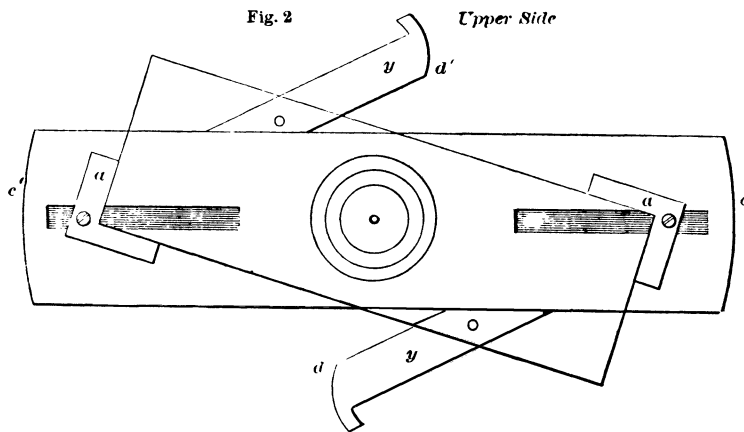


Fig. 1, which is reduced to one-third of full size, represents the table, front view. The stand *A* is made of wood highly finished, with the open chambers, *A'* *A''* *A'''* affording a convenient place for laying the various utensils in use, and also for packing them together with materials, etc., for transportation. The head-block *B*

is of solid brass, $4\frac{1}{8} \times 1$ in. and $\frac{1}{4}$ in. thick. It stands on a spindle, *C*, five inches long, which is supported by the metallic collars *D* and *E*. The lower end of the spindle is dressed to a sharp point and rests on a plate of polished agate underneath the collar *E*. A couple of inches of the central portion of the spindle are milled, and the instrument is run by the tips of the fingers of the left hand, placed against this milled portion, while the hand is steadied by resting the thumb against the pillar *F*. The revolution of the slide is thus under the complete control of the operator, who can readily keep it in uniform motion, quick or slow, for any desired length of time.

Fig. 2 shows the upper side of the head-block, with a glass slip held in place.

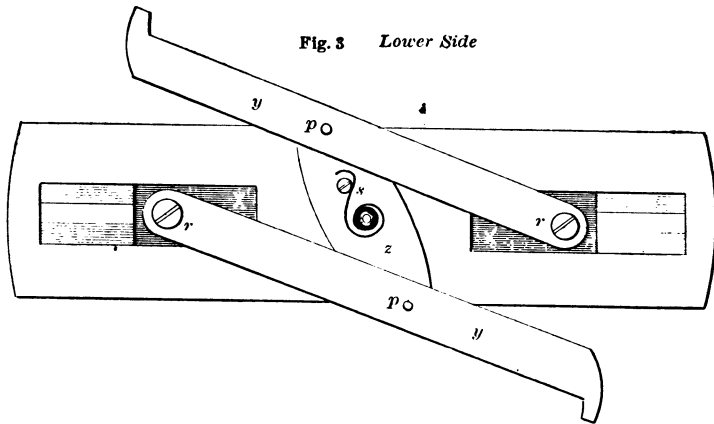


The clutches, *a* (fig. 2), are set so as to grasp the slip diagonally, bringing it to a true center, and at the same time leaving one of its corners projecting $\frac{3}{8}$ of an inch on either side for convenient handling.

The clutches are secured in position, being screwed fast to the brass blocks, *x* (fig. 3), which move firmly but freely through the grooves cut for them. The lever bars, *y*, are attached to these blocks by the strong screws, *r*, and are connected with the center bar, *z*, which is let into them by a mortice and held by the pins, *p*.

The clutches are opened for the reception of the glass slip, by

placing a finger of the right hand against the milled end of the head block at c (or c'), and pressing the end of the lever bar with the thumb at d (or d').



The grasping force of the clutches is secured through a spiral spring, s (figs. 1 and 3), coiled around the head of the spindle as shown in the figures.

The whole rests on disks of rubber, so that it will neither slide about nor mar any surface on which it may be used.